Transitional procedures:

- Not addressed.

State preemption:

- Not addressed.

Other issues:

- An EPA study "shows that the magnetic energy present in the near-field" of typical broadcast radiators "is much higher -- as much as 60 dB higher -- than the energy content of the electric field." The ANSI standards limit human exposure to both the magnetic field and electric field components of radiofrequency radiation. Thus, Narda's personal monitors are designed to detect the magnetic field (2).

- Some "of the protective clothing being touted blocks only the electric field component" and has little effect on the magnetic field. This type of protective clothing "leads to a false sense of security that endangers human health" (2).

NATIONAL ASSOCIATION OF BROADCASTERS

Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: NAB is a nonprofit, incorporated association of radio and television stations and networks which serves and represents the American broadcast industry (1).

Adoption of 1992 ANSI/IEEE Standard:

- NAB recommends that the revised ANSI/IEEE standard be adopted as the foundation for new FCC RF radiation exposure guidelines. It notes that the record "reflects substantial support" for the FCC's proposal and "reflects some opposition" and envisions a "more detailed response" to both on reply (9-10).

- NAB believes that ANSI/IEEE C95.1-1992 represents the most up-to-date standard for RF radiation exposure limits. It discusses and compares the NCRP, IRPA and ACGIH standards as possible alternatives, concluding that substantial agreement is found among the several standards in the body resonant range from 30 to 300 MHz. Where differences occur at the frequency extremes, the greater logic appears to adhere to ANSI/IEEE. Where discrepancies do exist, it is important to keep in mind that ANSI/IEEE C95.1-1992 is a more current document (32-35).

- The Notice invites comment as to whether the NCRP restriction for signal modulations is important for the protection of workers (¶ 25). NAB believes that it is not. Aside from the fact that considerable controversy still exists in the scientific community on the validity of the claims for neurophysiological effects and whether or not human health effects are involved, modulation of carriers at 50 percent or greater at frequencies of 3 to 100 Hz is a rare occurrence. When such modulation does occur, it would be for only short time intervals (35).

Induced currents:

- Induced and contact RF currents should be the subject of rational and practical regulation. NAB believes that the introduction of body current limitations could have a significant impact on broadcasters. The Commission must consider carefully how broadcasters would certify compliance with the body current standard, given the conditions set forth in ANSI/IEEE C95.1-1992 (27).

- ANSI/IEEE C95.1-1992 specifies that induced and contact currents shall be limited over a frequency range of 3 kHz to 100 MHz. This 100 MHz "break point," approximately mid-way through the FM broadcast band, presents a particular dilemma with respect to equitable treatment of FM broadcasters. NAB believes

that the most appropriate forum to address the issue of the 100 MHz break point -- and to decide on a final regulatory decision on that matter -- the proceeding to develop an updated OST Bulletin No. 65 (27-28).

- Since the advent of AM broadcasting in the 1920s, energized AM towers have been climbed during maintenance procedures with seemingly little, if any, effect on the climbers. However, the adoption of exposure criteria by the Commission raised proper questions with respect to the practice. Now, theoretical and experimental work has shown that work on energized towers is feasible without exceeding specified SAR limits if the power applied to the tower is controlled (30).

- Though not explicitly stated in the ANSI/IEEE standard, NAB believes strongly that, by extension, the concept of transient passage and exposure can be applied in the evaluation of facilities for compliance with induced RF body currents. If it is logical that the "controlled environment" RF field limits are "safe for all," then it is also logical that the "induced current limits" at the "controlled environment" level are also "safe for all" (31-32).

- See measurement and compliance procedures.

Contact currents:

- Transient exposure should not apply to contact currents. These should be evaluated by other means (32).

- See measurement and compliance procedures.

Controlled v. Uncontrolled environment:

- One of the most important aspects of the new ANSI/IEEE C95.1-1992 RF exposure standard is the two-tier specification of maximum permissible exposure (MPE) environments. One is designated for the "controlled environment" and a more restrictive one is designated for the "uncontrolled environment" (13).

- Because ANSI/IEEE found "the limits embodied in the controlled environment are 'safe for all'," NAB does not agree with the Commission's assertion that it is best to take a conservative approach and apply the conditions of the uncontrolled environment wherever possible. Rather, the conditions of controlled or uncontrolled environments should be applied as warranted for each communications operation (14-15).

- A key element in the assessment of any communications operation is the concept of "transient passage" or "transient exposure." The concept of transient exposure accommodates some of the practical realities of regulation of RF exposure (15).

- Within the broadcast environment, there are four operational areas for evaluation to which the above definitions can be applied: the transmitter facility, studio facility, business offices and remote pickup facilities. NAB believes that only the business offices clearly would be considered to be an uncontrolled environment. It develops arguments showing why the others are controlled (16-20).

- Depending on station practices with respect to transmitted power, controlled and uncontrolled areas can be defined using easily applied numerical calculations or by resort to graphical depictions of the relationship of radiated power, frequency and distance to maximum permissible exposure contours (20).

Measurement and compliance procedures:

- The Commission should follow a "three-pronged" approach for broadcasters and others needing to certify compliance. Under this approach, the FCC would adopt, and incorporate in a revised OST Technical Bulletin No 65, charts and graphs that could be employed to determine easily, in the majority of situations, compliance with the FCC's RF exposure guidelines. Where compliance, using these charts and graphs, cannot readily be confirmed, then the Commission should allow its regulatees to employ mathematical formulas to determine compliance. Only when compliance cannot be determined by using the above-mentioned techniques would a broadcaster or other party subject to the revised rules be required to conduct actual measurements (4, 10-13).

- One of the hallmarks of the current FCC regulatory program for controlling human exposure to RF radiation is FCC OST Bulletin No. 65, which provides broadcasters and many other FCC licensees with detailed guidance on how to achieve and certify compliance with the FCC RF exposure guidelines. The Bulletin was produced as a cooperative effort among government personnel and industry representatives. NAB trusts that the process which led to the creation of the Bulletin will be repeated as part of the Commission's adoption of the revised RF exposure guidance, pointing toward a new bulletin or family of bulletins. There are several matters of implementation and interpretation that deserve thorough study, careful decisionmaking and clear guidance to FCC regulatees. These matters, we believe, are best addressed through the kind of process which resulted in OST Bulletin No. 65 (10-11).

- NAB is aware that NARDA Corp. now has available instrumentation for directly measuring induced currents (and direct contact currents at certain frequencies). However, requiring all broadcasters to perform costly field measurements to demonstrate compliance with the body current limitations would surely have a severe, negative impact on broadcasters (29).

- NAB strongly supports the adoption of a recommended measurement practice, especially with respect to the measurement of induced body currents. Though the instrumentation needed to measure body currents is available on the market presently, there are no accurate and repeatable procedures in place for performing measurements of induced and contact currents. Further, it is necessary not only to set forth the mechanics of making measurements, but also the methods for certifying the broadcast facility (39-40).

- NAB contracted with Jules Cohen, P.E., to work on developing a revised OST 65 and appends the draft that resulted. This developed compliance tools based on the reasonable premise that, at some level of field exposure, the induced current limits specified in the ANSI/IEEE standard cannot be exceeded. Thus, if a broadcaster can demonstrate compliance with the field MPE, then compliance with the induced current limit can be demonstrated using the charts and graphs. These materials should be viewed as a "starting point" for the collegial, deliberative process that will lead to the preparation of a final technical bulletin (12-13, 30).

- Research data available for induced currents do not appear to exist for contact currents. Contact currents vary with the size and shape of the object contacted. Furthermore, and particularly if the object is relatively small, the presence of a body in a the near vicinity modifies the field. Based on the limited information available, NAB proposes that the FCC could assume, for purposes of its guidelines, that electric fields low enough to guarantee compliance with induced current criteria will, in general, also assure compliance with contact current criteria (31).

- The Commission's application forms should all treat the environmental question in the same manner. Perhaps the question should be split into two parts, one relating solely to radiation exposure, and the second relating to the other environmental factors included in Section 1.1307 of the Commission's Rules. A response to the radiation aspect of the environmental rules should include a brief statement acknowledging conversance with the FCC's guidelines and indicating the method used to determine compliance. The statement should be in sufficient detail to permit an independent judgment that compliance has been achieved. Once such a showing has been made and accepted by the Commission, a licensee should be allowed to refer back to the earlier filing, supplemented, if necessary, because of any change made in the facilities or their environment (37-38).

- An additional component for demonstrating compliance with the ANSI/IEEE exposure standards might be the use of, so called, RF protective clothing. NAB urges the Commission to allow use of such RF protective clothing and to consider the user to be in compliance with ANSI/IEEE exposure standards while wearing a suit, so long as the user follows the manufacturer's instructions which would

specify the situations, and field strengths, in which the suit safely could be worn (38-39).

Categorical exclusions:

- NAB believes that, in general, those facilities authorized under Part 74 -- remote pickup, low-power auxiliary, aural auxiliary, and television broadcast auxiliary -- continue to qualify for the categorical exclusions under paragraph (b) of § 1.1307. NAB details why the low-power and manner of use result in no significant exposure (20-26).

- Aural broadcast studio-transmitter links (STL), intercity relay (ICR) stations and microwave booster stations, included in Subpart E of Part 94, clearly continue to qualify for categorical exclusion (22).

- Hand-held wireless microphones are not carried with their antennas within 2.5 cm of the body and are, therefore, excluded under Section 4.2.1.1 of the revised standard. Wireless microphones worn on the body, in applications where the performer conceals the microphone within his or her costume, cannot be excluded in accordance with the standard. However, such devices are of sufficiently low power that suitable dosimetric calculations or experimental procedures should be able to demonstrate that the permitted specific adsorption rate (SAR) is not exceeded. Proof of compliance with the standard would appear to be an appropriate requirement to incorporate in the FCC equipment authorization process (26).

Transitional procedures:

- Insofar as the effective date of such revised guidelines is concerned, NAB urges the Commission to set a date one year following the issuance of a revised Technical Bulletin for the new rules to be effective for new applicants and for applicants seeking changes to existing facilities. Concerning the status of existing facilities making no changes, NAB concurs in the Commission's proposal to have these licensees comply with the revised rules as they file for license renewal, or it could adopt a more lenient approach (36).

- Equipment now used in categorically-excluded services which, in the future, may require a showing of compliance by the manufacturer, should be allowed to be continued in service for its remaining useful life. Manufacturers should be allowed a reasonable length of time -- perhaps one year after adoption of revised rules -- to submit to the Commission proof of compliance with the new standards for recertification of the suitability of the equipment for the intended service. At some period -- perhaps eighteen months after adoption of new environmental rules -- only re-certified equipment should be allowed to be sold (36-37).

State preemption:

- The Commission must address the growing need for RF radiation/land use federal preemption. For nearly two decades, NAB and its members have experienced delays and have been unable to build FCC-licensed facilities due to the intervention of nonfederal authorities, and the situation is getting worse. NAB describes its 1986 petition seeking preemption and the FCC's 1990 denial, which was based in part on the absence of a federal standard. NAB discusses its comments on the 1993 Public Notice concerning a Court of Appeals reversal of a satellite dish preemption order, and notes preemption requests in the present proceeding. NAB again urges the Commission, in this broad-based proceeding on RF radiation exposure guidelines, to confront the important need for responsible and lawful federal preemption (40-45).

- It is a matter of public record that NAB, the Electromagnetic Energy Policy Alliance and many other parties are forming a consortium of parties considering alternatives for seeking -- on an "all industry" basis -- wide-scale FCC preemption of overly restrictive nonfederal regulation of broadcast towers/antennas (45).

Other issues:

- NAB is participating in the comments submitted by the Electromagnetic Energy Policy Alliance. These Alliance comments address the Commission's Notice from the perspectives of various communications companies and technologies (3).

- To better address and understand the growing issues of nonionizing energy, including its biological effects, the regulation of exposure and the public perception of these issues, in the 1984 NAB became a founding member of the Electromagnetic Energy Policy Alliance. The Alliance has been extraordinarily active in covering all aspects of these matters. Each year the Alliance has conducted symposia and courses addressing RF radiation-related topics. It has conducted and directed research on RF radiation exposure, testified at Congressional hearings and has commissioned, among other projects, a biostatistical review of the many scientific studies on RF exposure. The Alliance also has issued "fact sheets" and other written materials that broadcasters and other communications companies have been able to use to explain the science and realities of RF energy exposure to various lay groups, including city councils, zoning boards and citizen groups, all of which often hold unfounded fears over RF exposure (6-8).

NATIONAL ASSOCIATION OF BUSINESS AND EDUCATIONAL RADIO, INC.

Comments on RF Environmental Guidelines Amendments
(January 7, 1994)

Interest: "NABER represents the large and small businesses that use land mobile radio communications" in conducting their businesses through six membership sections: "Users, Private Carrier Paging licensees, System Integrators, Technicians, Specialized Mobile Radio operators, and Site Owners and Managers" (1-2)

Adoption of 1992 ANSI/IEEE Standard:

- NABER supports the 1992 ANSI/IEEE Guidelines as a "scientifically based standard that will maintain safe uses of radio frequency energy" (2-3).

- NABER supports the new guidelines since "all significant known effects are accounted for in the new guidelines," and "NABER supports the process used by the ANSI/IEEE standard" (6).

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- Supports the "controlled" and "uncontrolled" environments concept. Part 22 and Part 99 devices should meet uncontrolled environment criteria. Part 90 land mobile and Part 94 private microwave devices should meet the controlled environment criteria because they "are more complex in nature and require a greater degree of education as a prerequisite to use" (3).

- Since "not all communications devices can be neatly classified for controlled or uncontrolled environments," NABER urges the FCC "to entertain case-by-case classifications" (3).

Measurement and compliance procedures:

- "NABER believes that it is the responsibility of the manufacturers to ensure that intrinsically safe equipment is available for the public. All end user equipment

should be subject to specific absorption rate testing as part of the FCC type-acceptance process," bear a label that "certifies its safety and compliance," and have "manuals and pamphlets" on how it "should be installed and maintained to ensure safe operations" (4-5).

- Applicants should "only be required to affirm the safety and compliance" of installed equipment. Opposes any increased documentation requirements; the FCC should instead rely on "randomly inspecting equipment" (6-8).

- "The complex nature of near-field electromagnetic wave theories requires a complete evaluation of measurement guidelines and procedures. The only effective way of insuring safety of operation is to empower an industry group with the responsibility of developing these procedures" (8).

Categorical exclusions:

- NABER believes that the Commission should adopt the ANSI provisions for low-power exclusions. "Exclusions based upon radiated power should not apply when the radiation device is operated within 2.5 cm of the body" (4).

- NABER supports maintenance of categorical exclusions for Part 22, Part 90, and Part 94 devices (4-6).

Transitional procedures:

- Once the Commission's new guidelines in this area become "final," "there should be an amnesty period" during which "manufacturers and users" of existing land mobile equipment "may verify the safety of their equipment and installations and take whatever corrective measures may be necessary" (6).

State preemption:

- Not addressed.

Other issues:

- Not addressed.

NATIONAL PUBLIC RADIO

Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Nonprofit, noncommercial organization that provides programming and interconnection services to 489 full service public radio stations.

Adoption of 1992 ANSI/IEEE Standard:

- The Commission should carefully assess the impact of the proposed guidelines on its licensees before adopting new rules in this proceeding (1-4).
- See state preemption.

Induced currents:

- NPR is concerned by the costs of determining compliance given the apparent need to make measurements and the tight budgets of public radio operators (2-4).
- See measurement and compliance procedures.

Contact currents:

- See induced currents and measurement and compliance procedures.

Controlled v. Uncontrolled environment:

- Stations "will need guidance in distinguishing between 'controlled' and 'uncontrolled' environments" through a document like OST 65 (5).

Measurement and compliance procedures:

- To reduce financial burdens, "non-measurement analysis procedures analogous to those in FCC OST Bulletin 65" should be used to the "maximum extent possible" and be available by the time of rules adoption (4).
- NPR surveyed its members using the draft revised OST 65 prepared by NAB for induced currents and found that of the responding stations "one-third exceed the field strength standard based on measured or predicted field strengths" and would have to conduct induced current measurements. This indicates that the draft approach would not be sufficient to avoid the financial burden of measurements (3-4).

- Specific measurement procedures should be recognized by the Commission. C95.3-1992 is of limited utility for broadcast station personnel and outside experts would be needed. A more practical document is needed (4-5).

- There need to be FCC standards for meters, which now fail without alerting the user. Personal monitors should be evaluated for accuracy of claimed (relates to the significance of H-field only measurement). Standards and directions for protective clothing need clarification (6-8).

Categorical exclusions:

- Not addressed.

Transitional procedures:

- Since there will be costs and since ANSI/IEEE found no verified injuries, "at a minimum, licensees should have several years to comply with the new standards once they are in effect" (8-9).

- The initial comments will provide "a large volume of new and useful information" that warrants "full consideration" prior to any "final order," and "one or more Further Notices Of Proposed Rulemaking" may be warranted. The "Commission may want to form an Industry Advisory Committee to debate and reach agreement on outstanding issues" (9).

State preemption:

- NPR urges the Commission to renew its efforts toward establishment of a federal RFR standard, particularly in light of the comments of EPA and FDA in this proceeding. It notes prior EPA efforts and states "it is probably appropriate for the EPA to complete this task because it is the only agency with the broad authority to issue guidelines for public exposure to radiofrequency radiation." And "ideally, a federal standard would preempt state and local standards, so that public radio broadcasters experience fair and consistent treatment nationwide" (9-10).

Other issues:

- Not addressed.

NATIONAL VOLUNTEER EXAMINERS

Comments on RF Environmental Guidelines Amendments
(April 16, 1993)

Interest: Comment by Vice President of the Question Pool Committee which prepares questions for amateur radio license examinations.

Adoption of 1992 ANSI/IEEE Standard:

- The comment envisions adoption and relates to future examinations of radio amateurs following implementation of the controlled and uncontrolled concepts (1).

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- It appears that Amateur Radio use involves both controlled and uncontrolled exposure environments. Amateur radio operators "are knowingly and willingly exposed" and people in residential areas "are inadvertently exposed" to nearby amateur transmitters (1).

Measurement and compliance procedures:

- The organization's Question Pool Committee develops questions for Amateur Radio license examinations. The comment attaches revised question sets for license applicants that include RF safety questions and requests FCC guidance on those as to accuracy and suggested additions, alternatives (1, attachment).

Categorical exclusions:

- Not addressed.

Transitional procedures:

- Not addressed.

State preemption:

- Not addressed.

Other issues:

- Requests advice as to the high frequency and VHF/UHF band guidelines the FCC recommends as being safe to the Amateur operator and to the public in a residential neighborhood. Especially needed are specific guidelines which indicate maximum safe effective radiated power levels and recommended minimum distance from the transmitting antenna to a human being (both the operator and public) for each of the Amateur Radio bands located at HF (3.5, 6, 10, 14, 18, 21, 25, 28 MHz), VHF (50, 144, 222 MHz) and UHF (420, 900, 1240 MHz). The most popular bands are located at 3.5, 7, 15, 21 and 28 MHz and 144, 222, 420 and 1240 MHz (1).

NEW JERSEY BROADCASTERS ASSOCIATION

Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Represents New Jersey radio and television broadcasters.

Adoption of 1992 ANSI/IEEE Standard:

- NJBA "supports a national standard for radiofrequency radiation exposure, a standard that preempts inconsistent and non-uniform state and local regulation of RF radiation" (1).

- NJBA "does not take any position on the parameters of the standard to be adopted, leaving that input to expert commenters and ultimately to the FCC itself" (2).

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- Not addressed.

Measurement and compliance procedures:

- Not addressed.

Categorical exclusions:

- Not addressed.

Transitional procedures:

- Not addressed.

State preemption:

- NJBA discusses prior proceedings related to preemption that suggest the need for a federal standard (1-3).

- NJBA reports recent efforts by the New Jersey Department of Environmental Protection and Energy to register every "FCC regulated emitter" in the state and require a "substantial registration fee" pointing, "at best," to "duplicative and unnecessary" regulation (3-4).

- The FCC has a duty under the Communications Act of 1934 to regulate "for the purpose of promoting safety of life and property." There is a need for a federal standard "and that federal standard set by the FCC should preempt local and state regulation of RF radiation" (4-5).

Other issues:

- Not addressed.

NORTHERN TELECOM, INC.

Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Northern Telecom manufacturer numerous transmitting devices used by both carriers and subscribers (1).

Adoption of 1992 ANSI/IEEE Standard:

- Northern Telecom supports the Commission's proposal to amend and update the guidelines and methods used for evaluating the environmental effects of RF radiation from the 1982 ANSI standard to the 1992 ANSI/IEEE standard. This is a positive step forward in ensuring the safety of equipment that emits RF radiation (1, 7).

- Northern Telecom is devoted to ensuring the safety of its products and believes that reasonable power limitations are prudent to protect the human health of users and the health of others that may be subjected to radio energy emitting from radio devices (1).

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- The "controlled" and "uncontrolled" definitions should follow the ANSI/IEEE suggestion, based on awareness, and not be differentiated solely on the status of employment (2).

- Emission levels from a cellular base station, when measured in areas accessible to the general public, must meet the uncontrolled limits, but, when measured in areas accessible only to informed workers, need only meet the controlled limits (2).

- The definition of "controlled" environments for base stations or fixed transmitter systems should extend beyond potential exposure to employees, and include installation or service by non-employees who are qualified technicians, since Northern Telecom assumes that those contractors are aware of the potential for exposure as a concomitant of their job (2-3).

Measurement and compliance procedures:

- Northern Telecom agrees that proof of compliance with low-power exclusions should be submitted as part of the equipment authorization process. However, it should be acceptable to show compliance with SAR guidelines by reference to measurements from testing of devices with similar radiating structures. This would avoid duplication of detailed testing and research that has already shown compliance with the guidelines (5).

- In the event that SAR testing is necessary, the Commission should consider, prior to instituting related requirements, (1) the current lack of procedures for recognizing, certifying, or otherwise acknowledging the competence of laboratories capable of satisfying ANSI/IEEE test criteria, and (2) the current limited availability of qualified testing facilities (now only two), which will hamper product/technology development and deployment until new testing capabilities catch-up to industry needs (5-6).

- Northern Telecom believes that the Commission rules should, whenever possible, permit proof of compliance by calculating exclusions based on radiated power (6).

- The Commission should obtain the necessary information for assurance of compliance with environmental RF guidelines. Northern Telecom believes that manufacturers of new products should be allowed to file statements or certifications of compliance with the new guidelines, with tests being made available for review at any time. This would eliminate excess filings and paperwork burdens, and reduce the resources required at the Commission for approvals (7).

Categorical exclusions:

- The Commission needs to clarify that, for low-power exclusions, average power, rather than peak power, is the proper calculation. Without such clarification, highly efficient PCS equipment using time-slicing technology may have to undergo specific absorption rate (SAR) testing because of the peak power utilized, even though its mean power level meets the low-power criteria (3).

- The low-power exclusion rule in the Notice only applies to frequencies up to 1500 MHz. Northern Telecom believes that, to prevent delay in the FCC's PCS deployment timetable, an appropriate "low-power" exclusion formula or formulas should be extended to include frequencies between 1.8-2.2 GHz, and that this method for determining low-power exclusions be allowed in lieu of SAR testing for type approval (3-4).

- Northern Telecom also agrees that additional caution is appropriate when the "radiating structure" is within 2.5 cm of the body. However, Northern Telecom

encourages the Commission to consider a very low-power exception, based on radiated power, for the 2.5 cm rule, so as not to delay new wearable radio devices serving specific health, safety and general welfare needs (4-5).

- Generally, Northern Telecom favors replacing the current categorical exclusions with new guidelines. However, it may be prudent to phase in the new guidelines, where prompt compliance would be an exceptional hardship. Further, there may be some public safety systems that warrant retaining, or retaining in part, the current categorical exclusions (6).

Transitional procedures:

- At this time, Northern Telecom believes that proof of compliance for new equipment is appropriate as part of the equipment approval process. Where new "health" guidelines are applied to existing equipment, proof of compliance could be filed with the Commission as an addendum to the prior equipment approval process (5).

State preemption:

- Not addressed.

Other issues:

- Not addressed.

PROFESSOR WAYNE OVERBECK
Comments on RF Environmental Guidelines Amendments
(August 10, 1993)

Interest: Professor of communications at California State University, Fullerton, commenting individually from the perspective of "weak signal DXers, the class of amateur radio operators most likely to utilize high gain directional antennas and high power in the VHF-UHF region" (1). (See also AARL Bio-Effects Committee Members' Comments.)

Adoption of 1992 ANSI/IEEE Standard:

- See controlled and uncontrolled environment.

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- "Few radio amateurs are aware of the electromagnetic radiation levels present near their own amateur stations." The 600,000 amateurs should not be exempted "given what we know today about the potential health hazards of electromagnetic radiation." Apply the standard for "uncontrolled environments to the amateur service." (1-3)

Measurement and compliance procedures:

- Since actual measurement would be financially prohibitive for amateurs, Professor Overbeck suggests that the FCC promulgate a rule requiring amateurs "to adopt operating and antenna-placement practices calculated to meet the exposure limits," explain what that means by chart, and test amateurs on it (3-5).

Categorical exclusions:

- Not addressed.

Transitional procedures:

- Not addressed.

State preemption:

- Not addressed.

Other issues:

- The comment appends a reprint from the Proceedings of the 27th Conference of the Central States VHF Society published by the American Radio Relay League, Inc. (1993) of a paper by Prof. Overbeck entitled, "EMR and Weak Signal DXing: The FCC May Change The Rules." This discusses scientific information suggesting athermal effects, including cancer. It also discusses the 1992 standard, stating that "there are many who question whether the new ANSI C95.1-1992 standard is adequate." (A, 3)

PACIFIC BELL AND NEVADA BELL
Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Use hand-held radios in the conduct of their business.

Adoption of 1992 ANSI/IEEE Standard:

- The Pacific Companies support the use of the new standard. However, as the Commission noted, adoption of the new standard poses some difficulties in implementation since the new standard contains some significant changes (1).

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- The commenters are concerned about the possible definitions of these two environments as applied to hand-held radios used by their trained technicians. These operations "should fall into the 'controlled' environment" but the NPRM indicates that all hand-held radios will be considered to be used in an uncontrolled environment unless there is only exposure to users who are aware of the potential for exposure. This would cause a hardship on utilities because many of these hand-held radios will become unusable under the new rules. SAR evaluation would be impractical because "dozens of radio types" would have to be evaluated in a laboratory (2-3).

- Utilities should be permitted to operate hand-held radios under the "controlled" environment rules, i.e., 7 watts or less of radiated power. The technicians who use hand-held radios are aware of radiation concerns, generally operate the transmitters only intermittently and are seldom in a situation that exposes the general public. Also, recent findings of the National Institutes of Health show that the radiation absorbed by the body is less than feared and only one fourth or one fifth the level considered safe by ANSI (3-4).

Measurement and compliance procedures:

- Not addressed.

Categorical exclusions:

- Not addressed.

Transitional procedures:

- Not addressed.

State preemption:

- Not addressed.

Other issues:

- Not addressed.

PACTEL CORPORATION
Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Subsidiary of Pacific Telesis Group and a holding company of wireless subsidiaries, including cellular carriers, paging carriers and radiolocation services that utilize microwave frequencies.

Adoption of 1992 ANSI/IEEE Standard:

- PacTel supports the FCC's commitment to incorporate the most up-to-date standards adopted by the scientific community regarding maximum safe exposure levels of electromagnetic frequency emissions. (2)

Induced currents:

- Not addressed.

Contact currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- Supports the approach outlined in the Notice to apply the guidelines for uncontrolled environments to any facilities that are in locations where proximity to the RF source may be unrestricted. (12)

Measurement and compliance procedures:

- Opposes increased regulatory filings that will not result in increased protection to the public and believes the FCC should not require routine documentation or evidence from applicants claiming compliance with environmental RF guidelines. (7)

- The FCC should require licensees to adopt occupational exposure guidelines to prevent worker exposure above the maximum levels set by ANSI. Other approaches, such as training, access to site measurement data, protective clothing and the use of RF sensing devices, can mitigate against the risk of worker exposure. (12)

Categorical exclusions:

- Continuation of the FCC's existing categorical exclusion for land mobile facilities is appropriate given the minimal opportunity for overexposure and land mobile's minute contribution to the ambient EMF emissions in the environment. (7-11 Exhibit 3)

Transitional procedures:

- Not addressed.

State preemption:

- Urges the FCC to preempt the establishment of independent state or local guidelines on RF exposure of federally licensed facilities. (3-6)

- Cites examples of local authorities imposing special conditions on a use permit and overturning use permits to modify existing cellular antennas and the resulting delay in deployment of services as evidence of the negative impact of local imposition of stricter exposure standards. (4-6, Attachments 1&2)

Other issues:

- Not addressed.

PAGING NETWORK, INC.

Comments on RF Environmental Guidelines Amendments
(January 25, 1994)

Interest: Common carrier and private carrier paging licensee.

Adoption of 1992 ANSI/IEEE Standard:

- PageNet supports adoption of the 1992 ANSI/IEEE standard but recommends retention of the categorical exclusion for stations licensed in the private and common carrier paging services. (3-4)

Induced Currents:

- Not addressed.

Contact Currents:

- Not addressed.

Controlled v. Uncontrolled environment:

- Not addressed.

Measurement and compliance procedures:

- The burden of assessing and certifying compliance with the new standard must be placed on site owners as they are the only entities with the radiation and engineering data to make that evaluation. Where multiple licensees share a single site, it would be impossible and inefficient to make the assessment on a station by station or application by application basis. (4, 7-8)

- The FCC has general authority to subject non-licensees to forfeitures for violations of its rules. (8-9)

Categorical exclusions:

- Attaches a recent study prepared by Raymond C. Trott Consulting Engineers which demonstrates that categorical exclusions remain appropriate even under the revised ANSI/IEEE guidelines -- the risk posed by numerous land-mobile facilities at a confined common site would normally be well below even the reduced levels allowed for uncontrolled areas. (5-6, Attachment)